

Exploring Mars With THEMIS: A Data User's Workshop

**October 24-25, 2005
Tempe, Arizona**

Workshop Conveners:

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There is an emerging community of scientists interested in the use of Mars Odyssey Thermal Emission Imaging System (THEMIS) data for exploring the composition and physical properties of the surface and atmosphere of Mars. The THEMIS data are both rich with potential for exciting discoveries and complex in their scope and utilization. The tools and techniques that have been developed to analyze THEMIS data have been evolving throughout the Odyssey mission, and have reached a high level of maturity and ease of use. A web-based interactive tool has been completed that greatly simplifies THEMIS data processing and analysis, and uses the THEMIS Data Processing System located at Arizona State University. This system eliminates the need to install software on the user's computers. The goal of this workshop is to demonstrate these tools and to have participants leave with all of the information and experience necessary to process, analyze, and mosaic THEMIS images.

This 2-day workshop is intended to be both a short course on

THEMIS data analysis and provide hands-on training in the use of THEMIS processing and analysis tools. The workshop will cover thermal infrared spectroscopy and multi-spectral analysis, nighttime thermal imaging to derive thermal inertia, and moderate resolution (18 m) visible imaging. The range of topics to be presented is intended to benefit both new and experienced THEMIS data users interested in martian surface and atmospheric science. Graduate students and post-docs are encouraged to attend. A CD-ROM containing presentation materials and software tools will be provided.

PROGRAM

Day 1

1. Overview of thermal IR spectroscopy.
2. Overview of the THEMIS instrument and investigation.
3. THEMIS data processing tools, including geometric projections, radiance corrections, surface-atmosphere separation.
4. THEMIS data analysis tools, including principal component analysis, spectral unit mapping, and thermal inertia mapping.
5. Generation of regional infrared and visible mosaics.
6. Selecting and extracting THEMIS data for analysis
7. Features commonly observed in THEMIS multi-spectral images and their variability.

Day 2

Morning.

1. Hands-on training using the THEMIS processing and analysis tools

Afternoon.

Open discussion of new and on-going research topics

PARTICIPATION AND REGISTRATION

The workshop will be held in the Mars Space Flight Facility on the campus of Arizona State University. Seating is limited to 40 people. Registration will be on a first come basis.

To register for the workshop, send the following information to Phil Christensen at phil.christensen@asu.edu

Full name:

Institution:

Full mail address:

Phone number:

e-mail address:

INDICATION OF INTEREST

Please respond with an indication of interest by Sept. 15. A second announcement for the workshop will be sent out to all responders containing details about the local hotels, maps, and meeting agenda.